

STUDIES IN THE HELIANTHEAE (ASTERACEAE). XXVI.

NEW SPECIES OF *ICHTHYOTHERE*.

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Three new species of *Ichthyothere* are described from various collections that have been sent for determination. The three species seem to represent distinctive and diverse elements in the genus, but all share certain features including broad multicostate outer involucre bracts, paleae with a central pair of very broad costae, thickened veins in the throat and lobes of the disk corolla, and presence of glands on the abaxial surface of the style branches in the female flowers. It is notable that all three species can be distinguished from each other by the form of pubescence on the corollas of the female flowers.

ICHTHYOTHERE GARCIA-BARRIGAE H. Robinson, sp. nov.

Plantae herbaceae erectae ad 2.5 m altae paucè ramosae. Caules sordido-virides subteretes striati facile collabentes perminute rufescentiter puberuli. Folia oppositae, petiolis 2-7 cm longis distincte interdum late alatis ad nodis auriculatis; laminae late ovatae plerumque 12-25 cm longae et 5-17 cm latae base acuminatae margine minute mucronulato-serrulatae apice abrupte anguste acuminatae supra et subtus plerumque in nervis et nervulis minute appresse puberulae subtus minute glandulo-punctatae inferne ascendentiter subpalmate 5-nervatae, nervis tertialibus transversalibus numerosis. Inflorescentiae late cymoso-paniculatae, bracteis inferioribus foliiformibus in petiolis ca. 3 mm longis in laminis lanceolatis 3.5-5.0 cm longis et ca. 1 cm latis apice anguste acuminatis; ramis ultimis ad 6-7 mm longis dense minute puberulis. Capitula ca. 3.0-3.5 mm alta et 3-5 mm lata; squamae involucri basillares ca. 5 minute lanceolatae ca. 1.5 mm longae; squamae majores exteriores 2 obovatae 3.0-3.5 mm longae valde convexae extus glabrae obscure striati, interiores 2 orbiculares ca. 2 mm longae et latae extus ca. 10-costatae; paleae obovatae ca. 3 mm longae et superne ad 1.5 mm latae. Flores feminei 2 in capitulo; corollae ca. 0.7 mm longae superne perdense pilosae, pilis uniseriatis argute acutis; achaenia 3.5 mm longa et 2.5 mm lata ca. 8-striata. Flores masculi ca. 30 in capitulo; corollae ca. 2.5 mm longae anguste infundibulares, tubis ca. 0.8 mm longis; faucibus ca. 1.4 mm longis, lobis late triangularibus ca. 0.4 mm longis et latis intus ad marginem distincte breviter papillosis extus paucè glandulo-punctatis; thecae antherarum ca. 1 mm longae; appendices antherarum tri-

angulares ca. 0.15 mm longae et 0.18 mm latae extus pauce glandulo-punctatae. Grana pollinis in diametro 30-33 μ m.

TYPE: COLOMBIA: Santander: carretera a Pamplona. Km 12 Alto de Los Padres. alt. 1700-1800 m. Yerba alta erecta 2.5 m alta. Hojas opuestas grandes. Inflorescencia blanca; estambres carmelitos. 18-Julio-1974. *H. Garcia-Barriga & R. Jaramillo M. 20550* (Holotype, US).

Ichthyothere garcia-barrigae is related to the distinctive *I. scandens* Blake of Costa Rica, Panama, and the northern Andes. Both have nearly identical paniculate inflorescences, bilateral heads with two female flowers, minute bracts at the bases of the heads, and weaker veins in the throats and lobes of the disk corollas. In both species the female corollas bear a dense distal tuft of uniseriate hairs and lack glands. The two species seem to form a distinct subgenus within *Ichthyothere*. The new species is distinct in the petioles which are distinctly winged to the base, and in the much larger and broader leaf blades with diverging rather than subparallel secondary veins.

ICHTHYOTHERE ELLIPTICA H. Robinson, sp. nov.

Plantae herbaceae decumbentes ad 30 cm altae base lignosae perennes. Caules tenues pauce striati in parte rubescentes puberuli. Folia opposita, petiolis brevibus 1-3 mm longis; laminae ellipticae 3-6 cm longae et 1-2 cm latae base et apice obtusae vel breviter acutae margine integrae supra glabrae vel subglabrae subnitidae subtus leniter pallidiores non nitidae in nervis et nervulis sparse puberulae supra basem valde trinervatae, nervis secundariis valde ascendentibus plerumque ad marginem parallelis. Inflorescentiae in ramis terminales pauci-capitatae. Capitula subsessilia aggregata ca. 7 mm alta et lata; squamae exteriores orbiculares ad 7 mm longae et latae apice obtusae extus glabrae ad 17-costatae; paleae ca. 4.5 mm longae superne ad 2.5 mm latae, costis 4, binis interioribus latioribus. Flores feminei plerumque 2 in capitulo; corolla breviter cylindratae 0.7-1.5 mm longae superne puberulae, pilis triformibus intermixtis, pilis uniseriatis apice argute acutis, pilis biseriatae apice non glandulosis bilobatis, pilis biseriatis apice glandulosis; achaenia fertilia ca. 4 mm longa et 3 mm lata ca. 18-striata. Flores masculi ca. 40 in capitulo; corollae albae 4.0-4.5 mm longae anguste infundibulares, tubis ca. 1.5 mm longis; faucibus ca. 2 mm longis, lobis oblongo-ovatis ca. 0.7 mm longis et 0.55 mm latis margine intus valde papilloso-fimbriatis extus dense pauce glandulo-punctatis; thecae antherarum 1.5-2.0 mm longae; appendices antherarum ovato-triangulares ca. 0.27 mm longae et latae extus et in connectivis superioribus glandulo-punctatae. Grana pollinis in diametro 30-37 μ m.

TYPE: BRASIL: Goiás: Serra dos Cristais. Grassy hillside campo on southern edge of Cristalina; elev. 1250 m; sandy soil. Stems decumbent from woody underground base; heads white. 4 April 1973. *W.R. Anderson 8126* (Holotype, UB; isotypes, NY, US).

PARATYPE: BRASIL: Goiás: Serra dos Cristais. Cerrado, 3 km West of Cristalina. Elev. 1175 m. Frequent. Stems 2-5, diverging or prostrate, to 30 cm long. Inflorescence ascending; heads white. 3 Nov. 1965. *H.S. Irwin, R. Souza & R. Reis dos Santos 9825* (UB, NY, US).

Ichthyothere elliptica has entire leaves, and the type specimen was initially determined as *I. integrifolia* Baker. The latter species is a less branching, more erect plant with very reduced leaves at the basal nodes and with leaves sessile. The new species seems distinctive in the complex pubescence of the female corollas, including uniseriate hairs and both glandular and non-glandular biseriate hairs.

ICHTHYOTHERE PETIOLATA H. Robinson, sp. nov.

Plantae herbaceae erectae 1 m altae? multo ramosae. Caules sordidovirides subteretes distincte striati facile collabentes sparse erecte pilosae. Folia opposita, petiolis 5-13 mm longis; laminae ovatae 4-9 cm longae et 1.0-4.5 cm latae base breviter anguste acuminatae margine serrulatae apice anguste saepe longe acuminatae supra pilosae subtus subcarnosae sparse glandulo-punctatae in nervis et nervulis pilosae supra basem valde trinervatae, nervis secundariis plerumque ab marginis vix divaricatis. Inflorescentiae in ramis terminales pauci-capitatae. Capitula sessilia vel subsessilia aggregata 5-6 mm longa et 4-5 mm lata; squamae exteriores orbiculares ca. 4.0 mm longae et 3.5 mm latae apice obtusae extus in parte puberulae aliter glabrae ad 17-costatae; paleae ca. 4 mm longae superne ad 1 mm latae, costis binis latis. Flores feminei 1 in capitulo; corollae anguste cylindratae ca. 0.5 mm longae apice pauca capitat-glanduliferae, capitulis glandularum multi-cellularibus; achaenia fertilia ca. 3.5 mm longa et 2 mm lata vix striata. Flores masculi ca. 55-60 in capitulo; corollae albae ca. 3 mm longae anguste infundibulares, tubis ca. 1 mm longis; faucibus ca. 1.5 mm longis; lobis triangularibus ca. 0.4 mm longis et latis intus ad marginem vix papillosis extus pauca glandulo-punctatis; thecae antherarum ca. 1 mm longae; appendices antherarum ovato-triangularis ca. 0.1 mm longae et 0.11 mm latae extus et in connectivis superioribus pauca glandulo-punctatae. Grana pollinis in diametro 23-25 μ m.

TYPE: BRASIL: Rondônia: Mineração Campo Novo (ca. 100 km SW of Ariquemes), forest on terra firma, 10° 34' S - 63° 37' W. Roadside weed; flowers white. 16 Oct. 1979. *J.L. Zarucchi, M.G. Viera, R.H. Petersen, C.D. Mota & J.F. Ramos 2727* (Holotype, INPA; isotypes, NY, US).

Ichthyothere petiolata is the only long-petiolate species that has been seen from Brazil. The heads with single female flowers are also rather distinctive. The corollas of the female flowers are notable for the multi-cellular capitate apical glands and the lack of other trichomes. Rondônia is rather isolated from other regions where *Ichthyothere* is known in Brasil.



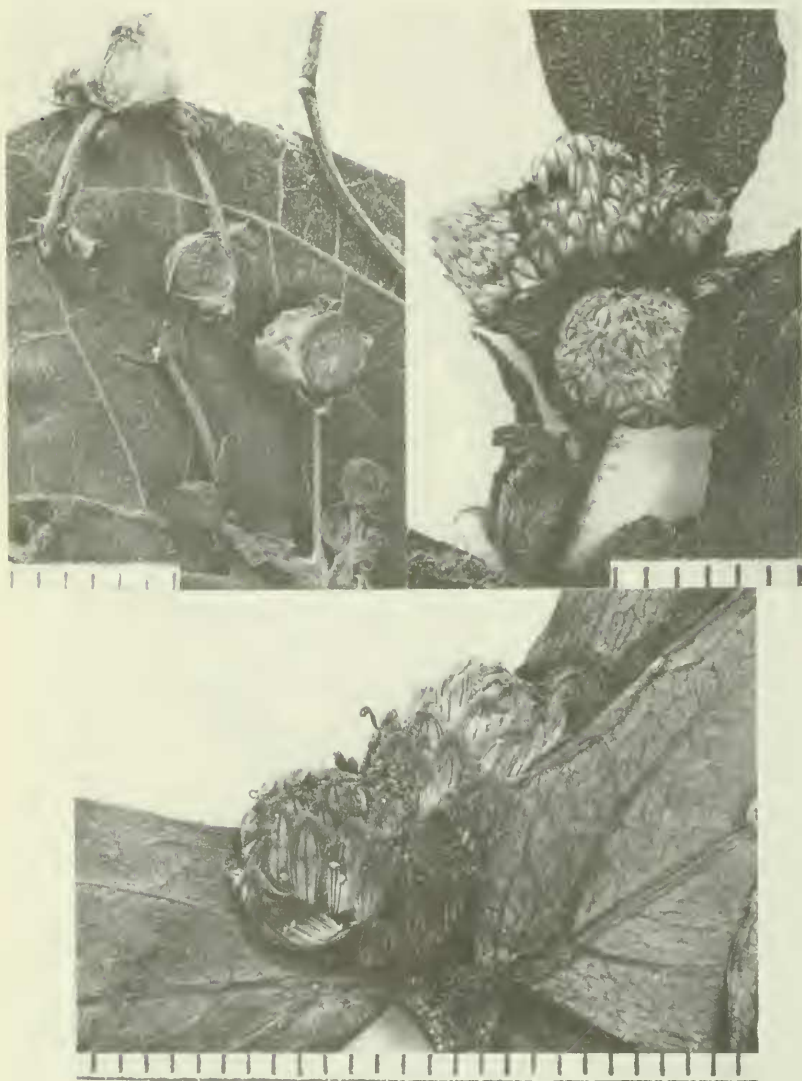
Ichthyothere garcia-barrigae H. Robinson, Holotype, United States National Herbarium. Photos by Victor E. Krantz, Staff Photographer, National Museum of Natural History.



Ichthyothere petiolata H. Robinson, Isotype, United States National Herbarium.



Ichthyothere elliptica H. Robinson, Isotype, United States National Herbarium.



Enlargements of heads of *Ichthyothere*. Top left: *I. garcia-barrigae*. Top right: *I. petiolata*. Bottom: *I. elliptica*.